

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for recording a bar code comprising a plurality of base elements, said method using a sequence of images from an image sensor, which together reproduce the bar code, images in the sequence being partially overlapping, said method comprising:

a) generating base element position information regarding borders of base elements in the images by analysing the images in the sequence, ~~and;~~

using the base element position information for extracting, from the images, base element values, each of which is indicative of pixel values of a base element; and

b) ~~reconstructing the bar code by using the contents of the various images and the base element position information~~ using the base element values.

2. (Currently Amended) ~~A method as claimed in claim 1, in which step a) comprises the following steps~~ A method for recording a bar code comprising a plurality of base elements, said method using a sequence of images from an image sensor, which together reproduce the bar code, images in the sequence being partially overlapping, said method comprising:

a) generating base element position information regarding borders of base elements in the images by analysing the images in the sequence, wherein the generating further comprises

detecting edges in an image, _

detecting directions of extension of the edges in the image, and

rotating the image, so that the directions of extension of the edges correspond to the direction of extension of rows or columns of pixels in the image; and

b) reconstructing the bar code by using the contents of the various images and the base element position information.

3. (Previously Presented) A method as claimed in claim 2, in which the detection of the directions of extension of the edges is performed using a Hough transform.

4. (Currently Amended) A method as claimed in claim 1, in which in ~~step a)~~ the generating one-dimensional data is created and frequency analysed for each image, said one-dimensional data describing the existence of intensity changes along a predetermined direction in the image.

5. (Previously Presented) A method as claimed in claim 4, in which said one-dimensional data for each image comprises a row transition vector, in which the elements have values which are representative of the amounts of intensity changes along a plurality of columns in the image, and a column transition vector, in which the elements have values which are representative of the amounts of intensity changes along a plurality of rows in the image.

6. (Currently Amended) A method as claimed in claim 1 or 4, ~~in which step a)~~ wherein the generating further comprises the following steps:

thresholding pixels in the image, so that the pixels assume one of two binary values;

generating a row transition vector, in which each element has a value which is representative of the number of transitions, in a plurality of columns in the image, from one binary value to the other between two adjoining rows;₇

generating a column transition vector, in which each element has a value which is representative of the number of transitions, in a plurality of rows in the image, from one binary value to the other between two adjoining columns;₈ and

frequency analysing the row transition vector and the column transition vector.

7. (Previously Presented) A method as claimed in claims 4 or 5, in which the frequency analysis is performed using an FFT algorithm.

8. (Cancelled)

9. (Currently Amended) A method as claimed in claim 8₁, in which the base element position information is a grid which defines the borders of the base elements in the image, and is applied to the image, ~~in which method the value of each base elements is determined based on the pixels in the image which are defined by the grid as belonging to this base element.~~

10. (Previously Presented) A method as claimed in claim 9, wherein the algorithm that determines the value of the base element is configured in such a manner that pixels at a great distance from the borders of a base element have greater weight than pixels close to the borders.

11. (Currently Amended) A method as claimed in claim 881, in which the base element ~~information-value~~ for each base element has less information contents than the corresponding part of the original image.

12. (Currently Amended) A method as claimed in claim 11, in which the base element ~~information-value~~ of each base element is represented by a bit.

13. (Previously Presented) A method as claimed in claim 1, in which the bar code is a two-dimensional bar code.

14. (Previously Presented) A method as claimed in claim 13, in which the bar code is a type PDF417 bar code.

15. (Previously Presented) A method as claimed in claim 1, in which the base element position information for an image in the sequence is produced by determining, from the content of the image, a grid which indicates the borders of the base elements in the image.

16. (Previously Presented) A method as claimed in claim 15, further comprising creating a binary base element representation of the image by representing each base element in the image with a single binary value.

17. (Previously Presented) A method as claimed in claim 16, in which the bar code is reconstructed by correlating binary base element representations created from the images in the sequence.

18. (Currently Amended) A system for recording a bar code comprising a plurality of base elements, which system uses a sequence of images which together reproduce the bar code, images in the sequence being partially overlapping,— which system comprises:

means for generating base element position information regarding borders of base elements in the images by analysing the images in the sequence;

means for using the base element position information for extracting, from the images, base element values, each of which is indicative of pixel values of a base element; and

means for reconstructing the bar code by using the base element values ~~the contents of the various images and the base element position information.~~

19. (Previously Presented) A system as claimed in claim 18, in which the bar code is a type PDF417 bar code, and the vertical extension of the images is such as to allow them to cover the full height of the bar code.

20. (Currently Amended) A computer ~~program~~ readable medium comprising a program for recording a bar code comprising a plurality of base elements, a sequence of images from an image sensor being used, which together reproduce the bar code, images in the sequence being

partially overlapping, ~~which computer program comprises instructions corresponding to the steps~~wherein the program comprises instructions for

a)~~that generating~~ borders of base elements in the images ~~is generated by analysing the~~
images in the sequence, and

using the borders for extracting, from the images, base element values, each of which is
indicative of pixel values of a base element, and

b)~~that reconstructing~~ the bar code ~~is reconstructed by using the contents of the various~~
~~images and the base element position information~~base element values.

21. (Cancelled)

22. (New) A method as claimed in claim 1, wherein the generating further comprises:
detecting edges in an image;
detecting directions of extension of the edges in the image; and
rotating the image, so that the directions of extension of the edges correspond to the
direction of extension of rows or columns of pixels in the image.

23. (New) A method as claimed in claim 22, wherein the detection of the directions of
extension of the edges is performed using a Hough transform.

24. (New) A system for recording a bar code comprising a plurality of base elements, which system uses a sequence of partially overlapping images which together reproduce the bar code, comprising:

a module which generates base element position information regarding borders of base elements in the images by analysing the images in the sequence;

a module which uses the base element position information for extracting, from the images, base element values, each of which is indicative of pixel values of a base element; and

a module which reconstructs the bar code using the base element values.